

REMARKS

Applicants request reconsideration and reexamination of the above-identified application in view of the amendments made to the claims to put them in condition for allowance. The following remarks state Applicants' bases for making this request and are organized according to the Examiner's Action. Applicants are cancelling Claims 2, 3, 6 to 13, 19 to 21, 34 and 35, adding new Claim 36, and amending Claims 1, 5, 22, 25 and 29.

Priority

The Office Action states that receipt is acknowledged of papers submitted under 3 U.S.C. 119(a)(d) which papers have been placed of record in the file.

Elections/Restrictions

The Office Action states that in view of Applicants' arguments and upon further consideration, Examiner is withdrawing the restriction requirement mailed on January 21, 2009. As a result, Examiner is considering Claims 1-35 as presented.

Drawings

The Office Action states that the drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the Claims. Therefore, the

"actuator means" must be shown or the feature(s) canceled from the Claim(s), and no new matter should be entered, Applicants have deleted the "actuator means" recitation from Claim 1 because it is not a feature of the present invention. Nozzle arrangements that activate and generate a spray of fluid are not new. The nozzle of an aerosol canister is often found as an integral part of an actuator button which is mounted to a stem of the aerosol can. The present invention is in the "fluid flow passageway" having a particular chamber (for example, as shown in Fig. 1a) wherein Claim 1 calls for "a first section downstream of the at least one inlet orifice to the chamber having divergent walls immediately followed by a second section, downstream of the first section, said second section having convergent walls" after recital of known nozzle arrangement elements in the preamble.

Applicant has added new Claim 36 which is directed to the shaped expansion chamber 21 as show in Fig. 1a, and in particular, in this configuration a cylindrical surface is provided at the maximum diameter giving a flat-bottomed V or U cross-section as shown by the dashed line 24a which may be of any relative length. Applicants believe that Claim 1 as amended and new Claim 36 are nonobvious and not anticipated by the cited prior art and that Claim 36 is patentable.

The Office Action states that the drawings are objected to as failing to comply with 37 CFR 184(p)(5) because they include the reference character "82" not mentioned in the description.

However, Applicants are amending the Specification of the present Patent Application to add the reference number "82". In the Specification on Page 13, Line 17, after "posts" add -- 82--. Applicants believe that the use of reference character 82 in Fig. 9 is now correct, and that the objection has been overcome.

The Office Action states that the drawings are objected to as failing to comply with 37 CFR 184(p)(4) because reference character 63 has been used to designate two separate features in Fig. 7. However, Applicants point out that on page 13, lines 7-9 of the specification, it states that "Figure 7 illustrates in sectional view shaped expansion chamber 61, having a widened section 60, wherein the peripheral surface 62 is formed with a plurality of pits or holes 63." Applicants point out that these "pits or holes" 63 in the surface of the Chamber 61 are shown as circles in the opposing wall of the chamber's widened section 60 and are shown in cross-section as rectangular recesses along the upper and lower edges of the chamber 61. Therefore, Applicants believe that the reference number "63" is used to designate the collective feature of "pits or holes", and that it is a valid use of a reference number.

The Office Action states that the drawings are objected to as failure to comply with 37 CFR 1.84(p)(4) because reference characters "302" and "302" have both been used to designate "flap" in Fig. 10. Applicants believe that the Office Action

may have intended to identify reference characters "302" and "303" and will respond accordingly. Applicants state that reference character "302" is used to designate the flap in its entirety whereas the reference character "303" is used to designate an orifice defining portion of the flap 302. The reference characters are described on pages 13 to 14 in the specification starting on Page 13, line 17 and continuing on Page 14 to line 5. Applicants believe that the reference characters in Fig. 10 are correct, and the drawing objection has been overcome.

Claim Rejections- 35 U.S.C. § 102

The Office action states that Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Pook (US 5,106,022).

The Office action further states that in regard to Claim 1, Pook teaches a nozzle arrangement adapted to be fitted to an outlet of a fluid supply and to generate a spray of fluid dispensed from the fluid supply during use, the nozzle arrangement having a body that has an actuator means (showerhead as disclosed) that is adapted upon operation to cause fluid to flow from the fluid supply (supply to showerhead in a bathroom) and through the nozzle arrangement (apparatus of the Figure), an inlet (12) through which fluid flows from the fluid supply accesses the fluid of the nozzle arrangement (apparatus of the Figure) during use, an outlet (9) through which fluid is ejected from the nozzle arrangement during use and an internal fluid flow passage (6,7,8) which connects the

inlet (12) to the outlet (9) where the fluid flow passageway (6,7,8) includes a chamber (5) and at least one spray orifice (orifice of "9") downstream of the chamber (4), the spray orifice (orifice of "9") having a cross-sectional area smaller than the cross-sectional area of any part of the chamber (4), the chamber (4) being non-planar expansion of the passageway (6,7,8) and having at least one inlet orifice (see other inlet of "12"), the chamber (4) being shaped such that its width is varied at least twice along its length (see section that meets with "4" below "5" and communicates with "4" in the Figure).

Applicants point out that Pook teaches a nozzle arrangement having a standard nozzle configuration with a convergent section followed by a divergent section. Applicants have amended Claim 1 to more particularly point out and distinctly claim the subject matter of the present invention by calling for "... the chamber comprising a first section downstream of the at least one inlet orifice to the chamber having divergent walls immediately followed by a second section having convergent walls.

Pook shows a chambered region immediately below the plug 5 which is merely provided as part of a machining operation necessary to produce the recess to receive the plug 5 and to form the subsequent swirl chamber 4. This chambered region is not forming a section of the Chamber 4. Further, Applicants point out that the first divergent wall section of the present invention is downstream from the at least one inlet orifice 22

whereas the chambered region in Pook is upstream from the inlets 12.

"Anticipation" means that the claimed invention was previously known, and that all of the elements and limitations of the claim are disclosed in a single prior art reference. (See *Akyo N.V. v. U.S. Int'l Trade Commission* 808 F.2d 1479 (Fed. Cir. 1986)). Therefore, under 35 U.S.C. 102, anticipation requires that each and every element of the claimed invention be disclosed in the prior art reference. Because Claim 1 now recites elements not disclosed by Pook, such as the divergent/convergent surfaces 24 in the chamber 21 downstream from the inlet orifice 22, Applicants believe that Claim 1 as amended is not anticipated by Pook. Applicants have cancelled Claims 2-4 and 6-8. Therefore, Applicants believe that Claim 1 is now patentable.

Further, Applicants have added new Claim 36 which covers the chamber of Fig. 1a when a divergent wall section and a convergent wall section are separated by a third wall section of constant width. Applicants believe that Claim 36 is not anticipated by Pook and that Claim 36 is patentable.

The Office Action also states that in regard to Claims 2-4, Pook also teaches where a shaped chamber (4) has a first section having a divergent walls (see first section having divergent section directly below "5" that continues into lower part of "4" in the Figure) immediately followed by a second section (main section of "4"), downstream of the first section the second section having convergent walls (wall of "4" is

converging as fluid flow converges from the first section below "5" into "4") and the divergent and convergent wall sections are separated by a third wall section of constant width (third wall is directly above the inlet opening '12" in the Figure).

However, Applicants point out as discussed previously that this chambered region immediately below the plug 5 and upstream of the inlets 12, does not form a section of the chamber 4. Notwithstanding this statement by the Examiner, Applicants have cancelled Claims 2-3 and Claim 4 is dependent on amended Claim 1 which Applicants believe is not anticipated by Pook. Therefore, Claim 4 is now believed to be patentable.

The Office Action further states that Claims 6-8 are anticipated by Pook. However, Applicants have cancelled Claims 6-8.

Applicant has amended Claims 5, 22, 25 and 29 to provide more proper and clear wording of the Claims and not to avoid any prior art.

Double Patenting

The Office Action states that claims 1-35 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,959,879. The Examiner further states that although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of Claims recite at least but not limited to common language to a nozzle arrangement having an actuating means, a fluid inlet, fluid

outlet, constriction means, a fluid passageway, diverging section or expansion sections.

Applicants do not agree with the Examiner's rejection of Claims 1-35 on the ground of nonstatutory obviousness-type double patenting based on Claims 1-35 in U.S. Patent No. 6,959,879. Applicants point out that both the '879 patent and the present application are directed to nozzle arrangements in which expansion chambers are provided in the flow passage designed to manipulate the fluid so as to improve the quality of the final spray. However, the arrangement claimed in the '879 patent is entirely different from the subject matter of the present application. In Claim 1 of the '879 patent, the flow passage has two expansion chambers arranged in series, each of which is preceded by a constriction means which causes the fluid to spray into its associated expansion chamber. The invention of the '879 patent is based on the finding that repeatedly breaking up the liquid stream into droplets by spraying it into a chamber and then re-forming the liquid stream improves the quality of the spray at the final outlet orifice. The present application is directed to an arrangement in which an expansion chamber is shaped so as to introduce turbulence into the fluid as it passes through the chamber. This has also been found to result in an improvement in the quality of a spray produced. It should be noted that the invention of the present application can be realized in a nozzle which has only one shaped chamber in the fluid passage

whereas the invention as claimed in the '879 patent must have at least two expansion chambers. It should also be noted that there is no requirement for the liquid to be sprayed onto the shaped expansion chamber of the present application. In light of the above, it is believed that the invention as claimed in the present application is patentably distinct over the subject matter claimed in the '879 patent. Further, the amended Claim 1 and new Claim 36 clearly distinguish the present invention from the '879 patent and are not obvious.

The Office Action further states that Claims 1-35 are provisionally rejected on the ground of nonstatutory double patenting over claims 1-98 of copending Application No. 10/562,801. This is a provisional double patenting rejection since the conflicting claims have not yet been patented. However, Applicants had terminated prosecution of this corresponding patent application, and Applicants filed a request with the United States Patent and Trademark Office on January 7, 2010 for Express Abandonment Under 37 CFR 1.138 of this application (copy enclosed). Therefore, Application No. 10/562,801 is no longer co-pending so there is no longer any basis for the provisional double-patenting rejection.

In view of the above, Applicants believe that Claims 1, 4, 5, 14-18, and 22-33 as amended and new Claim 36 are now in condition for allowance. Reconsideration of the above objections and rejections is respectfully requested.

Atty. Docket No.: 33922

Accordingly, it is requested that the foregoing Amendment be entered and the case sent to issue.

If there are any questions, we urge the Examiner to call us. Please charge any cost in connection with this document to our Deposit Account No. 16-0875.

Respectfully submitted,
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